REMARKS

Claims 1-10 are pending in this application. Claim 11 has been canceled without prejudice or disclaimer. Claims 1-10 have been amended herein. No new matter has been added.

The drawings are objected to under 37 CFR 1.83(a) (Office action point 2).

The Examiner objected to the drawings for not showing features of claim 11. The objection to the drawings is overcome by the cancellation of claim 11 without prejudice or disclaimer.

Claim 11 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention (Office action point 3).

The rejection of claim 11 is overcome by the cancellation of claim 11 without prejudice or disclaimer.

Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite (Office action point 4).

The rejection is overcome by the amendment to claim 5, clarifying the recitation of the claim. Claim 5 has been amended to recite "wherein the electrode layer is not electrically connected to any power supply potential of the semiconductor device".

Claims 6-10 are objected to because of the informalities (Office action point 5).

Applicants note that the Examiner apparently meant to object to claims 2-10.

The objection is overcome by the amendments to claims 2-10. As suggested by the Examiner, "A semiconductor device" has been amended to –The semiconductor device– in the first line of each of the claims.

Claims 1-9 are rejected under 35 U.S.C. 103(a) as being anticipated by Nitta (U.S. Patent No. 5,798,537) in view of Usagawa et al. (U.S. Patent No. 5,373,191) (Office action point 6).

The rejection of claims 1-9 is respectfully traversed and reconsideration of the rejection of claims 1-9 is respectfully requested.

The present invention relates to a high power semiconductor device for a radio communication system. (The preamble to claim 1 has been amended to clarify this point). On the other hand, Nitta's invention relates to a light emitting device and is completely different from the present invention.

Specifically, sapphire substrate 100 in Nitta is a conductive layer (column 2, line 6; column 3, line 14). However, in the present invention, the substrate is a compound semiconductor substrate, which is different from a conductive sapphire substrate.

The device disclosed in Nitta is an optical device, unlike that of the present invention, which desires to avoid the bad influence of the Gunn Effect. There is no such desire for the Nitta device

and a super lattice buffer layer would in Nitta would not clearly fill any need. Accordingly, there is no motivation to substitute super lattice layers 8, 9 shown in Usagawa for the buffer layer 101 in Nitta.

Moreover, even if Usagawa's super lattice layers were substituted into Nitta, the resultant device would not clearly function for Nitta's intended purpose because the direction of electric current is different.

Usagawa's invention relates to a low power, low noise device (see line 45, column 2) and therefore is quite different from the present invention, which relates to a high power semiconductor device, which may be badly affected by the Gunn Effect. The Gunn Effect does not happen in a low power device such as Usagawa's.

Applicants therefore submit that there is no suggestion or motivation in either of the two cited references for the proposed substitution. The Examiner stated that "it would have been obvious to one of ordinary skill in the art to form the buffer layer of Nitta's device having a [super] lattice structure such as taught by Usagawa et al., in order to prevent the lattice mismatch between the substrate and the epitaxial layers formed above the structure". However, there is no suggestion in the references that the super lattice layer can prevent the lattice mismatch.

Regarding the rejection of claim 8, the two dimensional electron gas is described only in embodiments in Usagawa which do not use the super lattice. Therefore, combination of these embodiments of Usagawa with Nitta do not provide a super lattice. Further modification of this combination would be required to meet the limitations of claim 8.

Applicants therefore assert that claims 1-9 are novel and non-obvious over Nitta (U.S. Patent

No. 5,798,537) and Usagawa et al. (U.S. Patent No. 5,373,191), taken separately or in combination.

Claims 10 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten (Office action point 7).

Since Applicants have traversed the rejection of claim 1, from which claim 10 depends, claim 10 has not been amended to be independent.

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact Applicants undersigned agent at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

Attached hereto is a marked-up version of the changes made by the current amendment. The attached page is captioned "**Version with markings to show changes made**."

In the event that this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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Enclosures: Version with markings to show changes made

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Please amend claims 1-10 as follows:

1. (Amended) A high power semiconductor device for a radio communication system, comprising:

a compound semiconductor substrate having a resistivity less than 1.0×10^8 Ohm-cm at least at surface thereof;

a buffer layer formed on the compound semiconductor substrate and having a super lattice structure; and

an active layer formed on the buffer layer and having an active element formed therein.

2. (Amended) ~~A~~ The semiconductor device as claimed in claim 1, wherein the compound semiconductor substrate has a resistivity less than 0.6×10^8 Ohm-cm.

3. (Amended) ~~A~~ The semiconductor device as claimed in claim 1, wherein the active layer is formed at a position within 5.0 μm from the surface of the compound semiconductor substrate.

4. (Amended) ~~A~~ The semiconductor device as claimed in claim 1, further comprising an electrode layer formed on another surface of the compound semiconductor substrate.

5. (Amended) ~~A~~ The semiconductor device as claimed in claim 4, wherein the electrode

layer is not electrically connected to any power supply potential of the semiconductor device.

6. (Amended) ~~A~~ The semiconductor device as claimed in claim 4, wherein the electrode layer is connected to one power supply potential of the semiconductor device.

7. (Amended) ~~A~~ The semiconductor device as claimed in claim 1, further comprising:

a source electrode and a drain electrode formed on the active layer, separated from each other so as to establish a channel region, and

a gate electrode formed above the channel region.

8. (Twice Amended) ~~A~~ The semiconductor device as claimed in claim 7, wherein the active layer has 2-Dimensional Electron Gasses.

9. (Amended) ~~A~~ The semiconductor device as claimed in claim 1, wherein the active layer comprises:

a collector layer of a first conducting type;

a base layer of a second conducting type formed on the collector layer;

an emitter layer of the first conducting type formed on the base layer.

10. (Amended) ~~A~~ The semiconductor device as claimed in claim 1, wherein the compound semiconductor substrate has a resistivity more than 1.0×10^8 Ohm-cm in total.